

Farm & Rural Communities



Jack Harrison

A Safety Net for Farm Households?

Current low prices for key farm commodities, combined with the 1996 Farm Act's lessening of farm sector reliance on government programs, are generating fundamental questions about the ultimate goals of farm policy and about alternative farm safety-net concepts. Most discussions of the farm safety-net issue focus on traditional farm program instruments, such as crop insurance and direct payments. While these policy tools provide income support to production agriculture—the farm *business*—their rationales are unlike most other forms of government support to individuals, which focus on the economic circumstances of *households*.

This article provides a general illustration of several scenarios for government assistance to agriculture, drawing on Federal programs that assist low- and middle-income households and that are based on the concept of ensuring some minimum standard of living. A review of current Federal assistance programs reveals a variety of ways to provide a safety net using this concept. Guided by these examples, USDA's Economic Research Service (ERS) constructed three scenarios for assisting farm households, based on different definitions of minimum standard of living: 1) regional median household income,

2) 185 percent of the poverty line, and 3) average household expenditures.

The costs of the three scenarios in 1997, a relatively good year for agriculture, were measured as the cumulative difference between each farm household's income (which includes any direct government payments) and these thresholds. A fourth scenario is presented, based on the amount of compensation necessary to ensure that self-employed farm operators receive an adequate return to their labor and management.

Any discussion of government programs that assist farmers would involve not only a consideration of policy goals but also a recognition of the heterogeneity of the farm sector. There is no representative farm, and program impacts would vary depending on various farm characteristics.

To capture the economic and geographic diversity of today's agriculture, ERS has already developed a farm typology (AO November 1999) and a regional segmentation (AO April 1999). The farm typology considers not only the size of the farm business, but also whether farming is the primary occupation of the operator; the regional scheme reflects geographic spe-

cialization in commodity production. Using these farm classification schemes, ERS compared the four alternative safety-net scenarios in terms of cost, distribution of farm household benefits, and rate of qualification for assistance, and contrasted the scenarios with the amount and distribution of actual direct government payments to farmers in 1997. The scenarios make no assumptions about whether safety-net payments are a substitute for or an addition to current farm program payments.

The first three safety-net scenarios—based on thresholds of regional median household, percentage of poverty line, and average household expenditures—were applied to roughly 1.7 million farm households (80 percent of total farms) identified in USDA's 1997 Agricultural Resource Management Study (ARMS). Operations classified in the ERS farm typology as *retirement* farms and *very large family* farms (gross sales of \$500,000 or more) are not considered. The former group is not as actively engaged in farming, while the latter tend to support more than one household at income levels well above the thresholds used here.

The fourth scenario constructed by ERS—based on compensation for farm labor and management—is limited to operators who identify farming as their primary occupation and whose farm businesses are organized as sole proprietorships. This group included about 700,000 farm businesses in 1997 (36 percent of total farm businesses).

While this study considers the impacts on farm types and on regions separately, the information is aggregated by region, and the distribution of farm types within regions can partially explain any disparity in the regional impacts for a given scenario. The analysis presented here does not consider implementation costs nor any secondary costs that may arise from the negative incentives created by programs employing similar bases for support. No adjustments or assumptions are imposed on existing farm programs. Farm household income is defined here on a before-tax basis.

Farm & Rural Communities

Defining the Farm Typology Groups

Small Family Farms (sales less than \$250,000)*

Limited-resource. Any small farm with gross sales less than \$100,000, total farm assets less than \$150,000, and total operator household income less than \$20,000. Limited-resource farmers may report farming, a nonfarm occupation, or retirement as their major occupation.

Retirement. Small farms whose operators report they are retired (excludes limited-resource farms operated by retired farmers).

Residential/lifestyle. Small farms whose operators report a major occupation other than farming (excludes limited-resource farms with operators reporting a nonfarm major occupation).

Farming occupation, lower-sales. Small farms with sales less than \$100,000 whose operators report farming as their major occupation (excludes limited-resource farms whose operators report farming as their major occupation).

Farming occupation, higher-sales. Small farms with sales between \$100,000 and \$249,999 whose operators report farming as their major occupation.

Other Farms

Large family farms. Farms with sales between \$250,000 and \$499,999.

Very large family farms. Farms with sales of \$500,000 or more.

Nonfamily farms. Farms organized as nonfamily corporations or cooperatives, as well as farms operated by hired managers.

* The \$250,000 cutoff for small farms was suggested by the National Commission on Small Farms.

Scenario 1:

Regional median household income

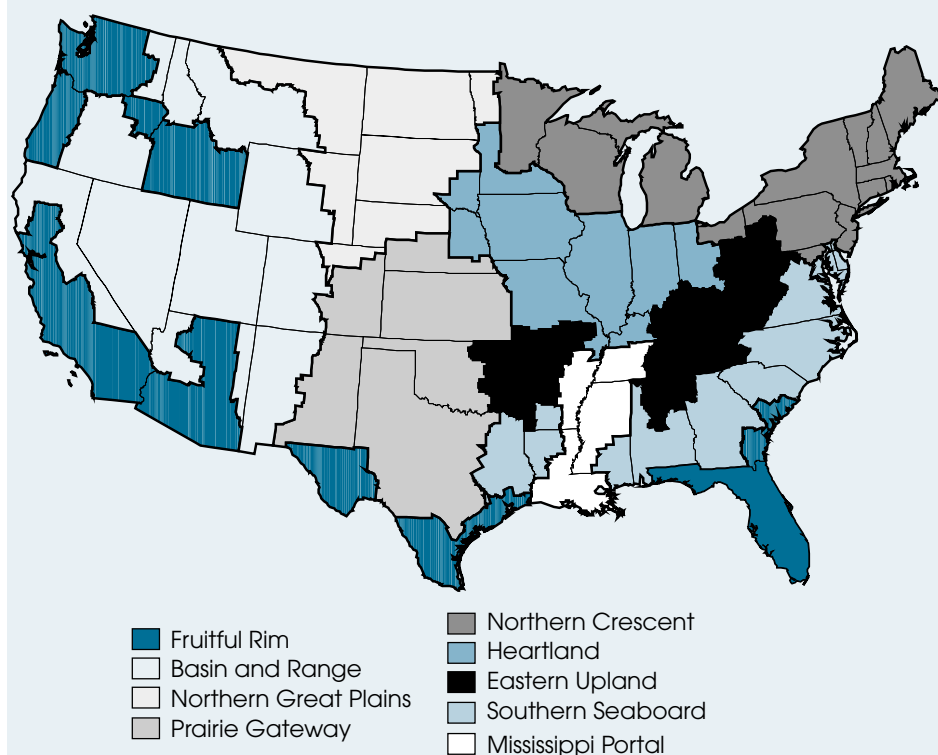
Safety-net costs for Scenario 1 are based solely on bridging the gap between median household incomes in each region and actual farm household income that falls below the median (see page 21 for definition of farm household income). The median U.S. household income in 1995 was \$35,050, based on data from the Bureau of the Census. County incomes from which the U.S. median is derived were weighted by the number of county households and averaged to obtain regional median income estimates. The Consumer Price Index (CPI) was used to adjust these estimated regional median household incomes to 1997 values. Costs and distribution of benefits are estimated by farm type and region for 1997.

Annual costs of a farm safety net based on median regional household income are estimated at \$12.5 billion for 1997 (\$17,275, on average, per qualifying household). The farm typology group that would receive the majority of benefits are the *limited-resource* and the *farming occupation, lower-sales* farm households. Costs of this safety-net scenario were lowest for the *large family farm* typology group, totaling about \$260 million.

While each farm typology group contained farms with incomes below the safety-net threshold, the proportion that would qualify for assistance varied greatly. For example, nearly all *limited-resource* farm households qualified for assistance using this safety-net measure. In contrast, only 17 percent of *large family farm* households qualified. More than one in three farms designated as *farming occupation, higher-sales* qualified for assistance, although closing their gap costs less than for the *residential/lifestyle* group, where only 29 percent qualified for assistance. The costs of ensuring a minimum standard of living depend on both the number of households that qualify for assistance and the magnitude of difference between their household income and the threshold level.

Costs for the regional median household income scenario were highest in the Northern Crescent and Eastern Uplands regions (where *limited-resource* and/or

Farm Resource Regions



Source: Economic Research Service, USDA

Farm & Rural Communities

farming occupation, higher-sales farms are numerous) and the Heartland region (the most farm populated), which together accounted for almost 60 percent of total safety-net costs. Safety-net costs were lowest in the Basin and Range region, although a high proportion of farm households in this region qualified as a result of the low household income of *residential/lifestyle* farms in that region. The high share of qualifying farm households largely reflects reduced opportunity in the Basin and Range region's nonfarm economy, because for the majority of U.S. residential/lifestyle farm households, off-farm income more than offsets any negative farm income. In 1997, only three regions—the Northern Crescent, Southern Seaboard, and Basin and Range—had 50 percent or more of farms qualifying for assistance using this safety-net measure.

Scenario 2: 185 percent of the poverty line

Several Federal assistance programs target households with incomes less than 185 percent of the poverty threshold, including the Supplemental Nutrition Program for Women, Infants, and Children (WIC) and the National School Lunch and School Breakfast Programs.

The poverty line for a family of four (the size of the average farm family) was \$16,400 in 1997; 185 percent of this amount is \$30,340. Safety-net costs for Scenario 2 are based on bridging the gap between 185 percent of the poverty level and the actual income of each farm household that falls below this level in each farm type and region.

The annual costs of this safety-net scenario are estimated at \$7.8 billion for 1997 (\$15,120, on average, per qualifying household). With the threshold about \$8,000 less than for Scenario 1 (regional median household income), costs in Scenario 2 were nearly \$5 billion less. Under Scenario 2, about 514,000 farm households would receive assistance, compared with almost 730,000 households with the threshold of regional median household income.

As in Scenario 1, the bulk of benefits under this scenario would accrue to farm households in the *limited-resource* and

Farm Operator Household Income: What It Does & Does Not Measure

Farm operator household income is measured according to the definition of income used in the Current Population Survey (CPS), conducted by the Bureau of the Census. The CPS is the source of official U.S. household income statistics. Calculating an estimate of farm household income that is consistent with CPS methodology allows comparisons between the income of farm households and all U.S. households.

The CPS defines income to include any receipts of cash. The CPS definition departs from a strictly cash concept by deducting depreciation, a noncash business expense, from the income of self-employed people. The derivation of operator household income from the 1997 Agricultural Resource Management Survey is outlined below.

	\$ per farm
Net cash farm business income	12,676
Less depreciation	6,578
Less wages paid to operator and gross farmland rental income	1,081
Less adjusted farm business income due to other households	1,505
	\$ per household
Equals adjusted farm business income	3,513
Plus wages paid to operator, net farmland rental income, and other farm-related earnings	2,692
Equals earnings of the operator household from farming activities (incl. direct government payments)	6,205
Plus earnings of the operator household from off-farm sources	<u>46,358</u>
Equals average farm operator household income	52,562

Net cash farm business income presented above differs from sector net cash income. Net cash farm business income is a component of farm sector income. It excludes the income of contractors, landlords, farms organized as nonfamily corporations or cooperatives, and farms run by a hired manager.

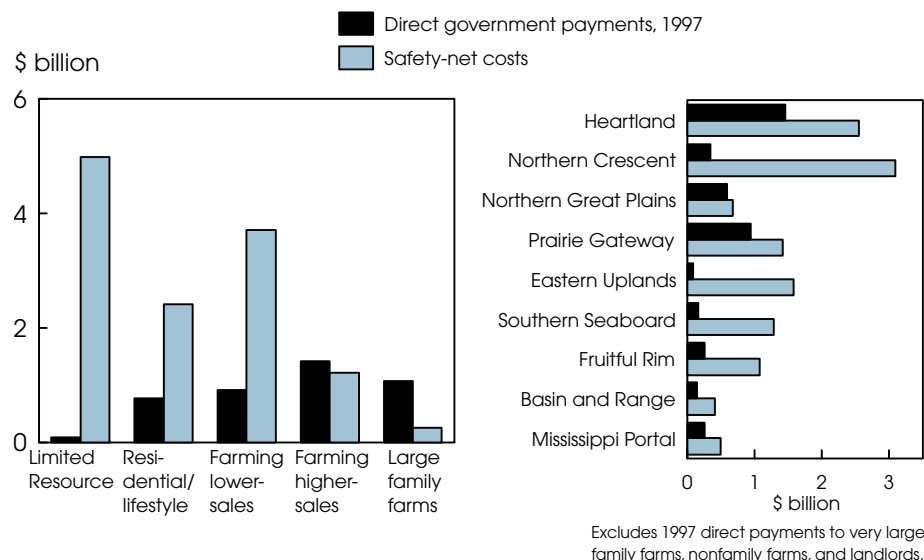
Earnings of the operator household from farming activities is not a complete measure of economic well-being provided by the farm. It leaves out some resources the farm business makes available to the household. For example, depreciation is an expense deducted from income that may not actually be spent during the current year. Household income also excludes noncash income, or the imputed rental value of the farm dwelling plus the value of farm products consumed on the farm, largely food and firewood.

Finally, earnings of the operator household from farming activities does not reflect the large net worth of many farm operator households. Most of this net worth is not readily available for household spending, since it is largely based on assets necessary for farming. However, some current assets are liquid. Farms may have inventories of crops, livestock, and production inputs that could be sold in emergencies. They may also have accounts receivable that could yield cash in a short time.

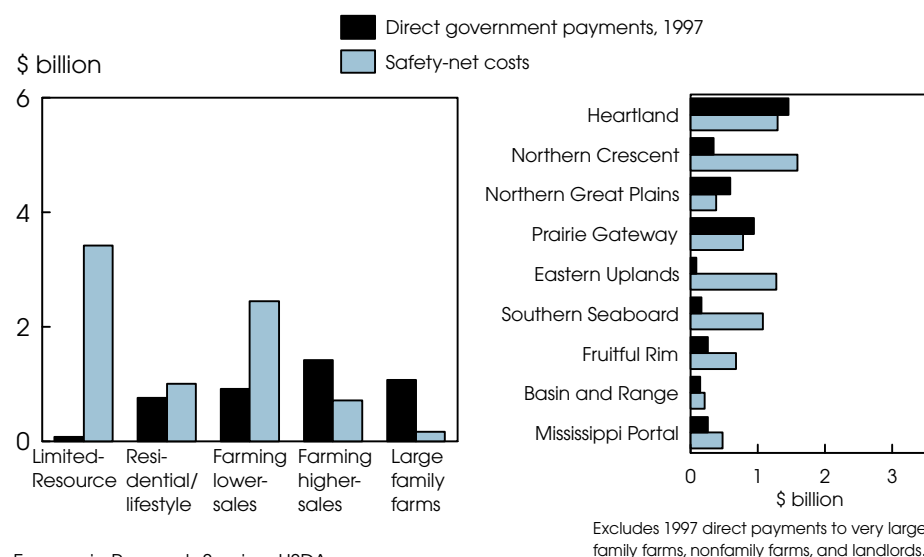
Farm & Rural Communities

Safety-Net Costs—Comparison with Current Farm Programs By Typology and Region

Scenario 1: Regional Median Household Income (est. total cost \$12.5 billion)



Scenario 2: 185 Percent of Poverty Threshold (est. total cost \$7.8 billion)



Economic Research Service, USDA

farming occupation, lower-sales groups. These two typology groups have the highest proportion of farms that qualify for assistance, 96 percent and 45 percent, respectively.

Average cost per recipient is highest for the *limited-resource* and *large family farm* classifications, each having costs at over \$18,000 in 1997. This result may be

indicative of the chronic nature of low household income for *limited-resource* farm households, while more reflective of a short-term cash flow problem of the farm business for the *large family farm* households, all of which depend on farming as their principal source of income and are more susceptible to farm business losses resulting from poor weather and other factors.

The regional concentration of costs is similar to results for the median household income safety net. Three regions—the Heartland, Northern Crescent, and Eastern Uplands—account for over 50 percent of total costs for 1997. The Basin and Range, Northern Great Plains, and Mississippi Portal Regions were the lowest cost regions. The low cost for the Northern Great Plains was surprising, given that this region had the largest share of farms classified as *farming occupation, lower-sales*, and the lowest average household income at \$38,911 in 1997. However, many qualifying farm households in this region had income in 1997 that was not very far below the 185 percent of poverty threshold level.

Scenario 3: Average adjusted expenditures

Safety-net costs for Scenario 3 are based on the gap between average adjusted U.S. household expenditures and the actual income of each farm household that falls below that threshold. U.S. household expenditures averaged \$33,797 in 1996, according to the Consumer Expenditure Survey. However, housing and transportation expenditures incurred by farm households are about half those incurred by U.S. households. To reflect this, average U.S. household expenditures were adjusted to \$25,863 for this study. This adjustment does not imply that farm households spend less on housing and transportation than other households, but that some of these expenses are commingled with the farm business.

Total cost for 1997 of a safety net based on average adjusted expenditures is estimated at \$6.1 billion (\$13,500, on average, per qualifying household), lower than the safety-net scenarios based on median household income and on 185 percent of poverty. About 450,000 farm households (25 percent of the 1.7 million farm households considered in the analysis) would have qualified for assistance in 1997 under Scenario 3.

Accounting for more than 70 percent of the total cost of this safety-net measure are households in the *limited-resource* and *farming occupation, lower-sales* typology groups. Ninety percent of *limited-resource* households and 30 percent of *farming*

Farm & Rural Communities

occupation, lower-sales households had incomes below the safety-net threshold. In contrast, only about 10 percent of the *residential/lifestyle* and *large family farms* categories qualified for assistance.

The Northern Crescent and Eastern Upland regions had the highest Scenario 3 safety-net costs, estimated at \$1.2 billion and \$950 million, respectively. Costs in the Northern Crescent region are accumulated primarily by farm households classified as *farming occupation, lower-sales*. In the Eastern Upland region, *limited-resource* farms account for two-thirds of the cost. In the Fruitful Rim region, which is characterized by relatively large specialty crop farms, average cost per qualifying household is \$23,000, nearly two times higher than for other regions. Many specialty crop farms are large operations, which require the full-time employment of the operator and family. In this situation, the farm household is entirely dependent on farm income.

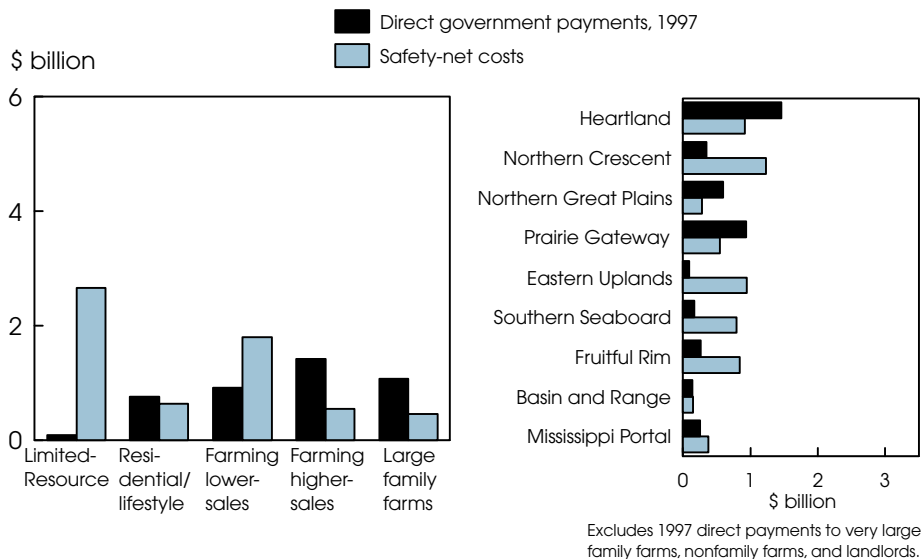
Scenario 4: Median hourly earnings of the nonfarm self-employed

A safety-net measure based on median hourly earnings focuses more specifically on the ability of farm businesses to provide an adequate return to owner/operators (rather than focusing on farm household income). Farm households would benefit as earnings for the farm business are supplemented.

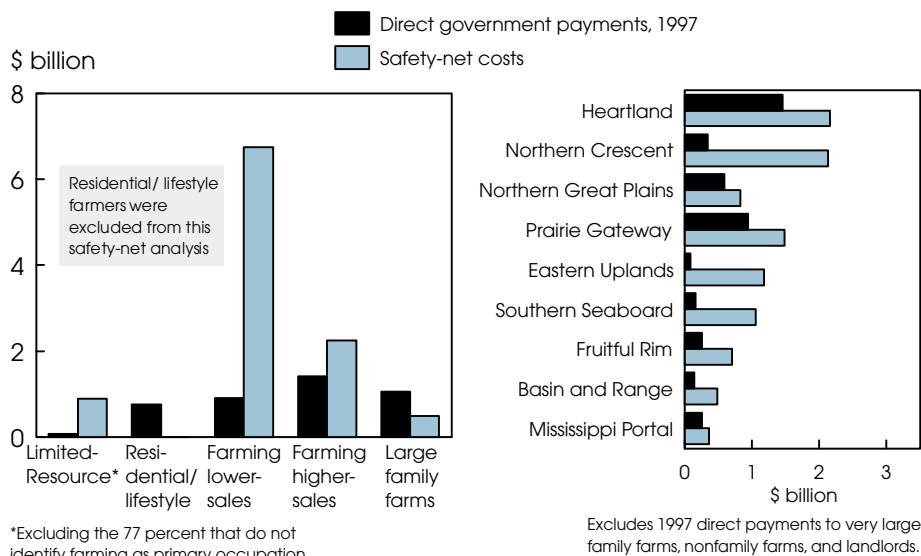
Median hourly earnings of nonfarm self-employed individuals who worked at no other job amounted to \$10 per hour in 1997, according to the Bureau of the Census Current Population Survey. Safety-net costs for Scenario 4 are based on the difference between the median hourly earnings of nonfarm self-employed persons and the estimated hourly earnings of farm operators who identify their primary occupation as farming and whose earnings fall below the median. To calculate the earned income gap used to estimate costs and distributional effects, this hourly wage gap is multiplied by the annual hours worked by each qualifying farm operator and aggregated by farm type and region. Excluded from this scenario are *residential/lifestyle* farmers and about 77 percent of *limited-resource*

Safety-Net Costs—Comparison with Current Farm Programs By Typology and Region

Scenario 3: Adjusted Household Expenditures (est. total cost \$6.1 billion)



Scenario 4: Median Hourly Wage of Nonfarm Self-Employed (est. total cost \$10.4 billion)



Economic Research Service, USDA

farms because they do not identify farming as their primary occupation.

Annual cost for the earnings safety net is \$10.4 billion (\$19,915, on average, per qualifying farm); nearly three in four farm businesses qualified for assistance. Among the different farm typology groups, *farming occupation, lower-sales*

farm businesses involved the largest cost, at \$6.7 billion, under this earnings scenario. Most farms in this classification (86 percent) qualified for assistance, second only to the *limited-resource* group, with 98 percent of farm operators (with farming as primary occupation) earning less than the safety-net threshold of \$10 per hour. Average cost per recipient

Farm & Rural Communities

ranged from \$14,000 for *limited-resource* farms to nearly \$24,000 for the *farming occupation, higher-sales* category.

Two regions—the Heartland and Northern Crescent—accounted for over 40 percent of the earnings safety-net costs for 1997. These regions contained 36 percent of *farming occupation, lower-sales* farm businesses in 1997. Average costs per recipient ranged from \$15,000 in the Eastern Uplands to over \$23,000 in both the Northern Great Plains and Basin and Range regions. The Eastern Uplands region had the highest share—88 percent—of farm operators qualifying for assistance in any region.

Comparison with Direct Farm Payments

In 1997, direct government payments to farms—including production flexibility contract payments, loan deficiency payments, and other program payments—totaled \$7.5 billion (paid to farmers and landlords). Only one of the scenarios considered here—adjusted average expenditures—generated lower total payments for 1997. Distributional effects by both farm type and region, however, are strikingly different. These scenarios do not assume that safety-net payments are either a substitute or an addition to current farm program payments.

The Federal Agriculture Improvement and Reform Act of 1996 (Farm Act) instituted a shift in Federal farm programs toward increased operator control by removing acreage restrictions. Farmers with a historical production base for wheat, corn, grain sorghum, barley, oats, upland cotton and rice were eligible to sign production flexibility contracts. The legislation provides specific payments to farmers over a 7-year period which generally decline after the first few years (except as modified by subsequent emergency legislation).

The Farm Act also provides for loan deficiency payments (LDP's) for major field crops, including oilseeds. Farmers are eligible for LDP's when posted county prices (or adjusted world prices for upland cotton, and rice) fall below the established government commodity loan rate adjusted for local conditions. The third major com-

ponent of programs providing direct government payments are environmental conservation programs, in which eligible farmers receive annual payments on the amount of environmentally sensitive acreage enrolled in these programs.

About 36 percent of all farms received some type of direct government payment in 1997, with payments per farm averaging \$7,987. By farm typology group, the share of farms receiving payments ranged from less than one-fifth of *limited-resource* farmers to three-fourths of farms in the *farming occupation, higher-sales* and the *large family farm* groups.

With the safety-net concept applied using the alternative scenarios, the distribution of total program benefits would change dramatically. Almost all *limited-resource* farm households would receive safety-net payments. Even though a lower percentage of *farming occupation, lower-sales* farm households would receive benefits than under current farm programs, the amount of payment per recipient would be more than twice as high. The total amount of safety-net payments going to *large* and *very large* farms would be half the amount of direct payments to these categories of farms in 1997.

The regional results also show that under the scenarios described here, farm households in the Northern Crescent, Eastern Uplands, Southern Seaboard, and Fruitful Rim regions would generally receive a higher level and a greater proportion of benefits than under current programs. Farms in these regions generally produce dairy products, beef, hogs, fruits, vegetables, and other farm products which are not under commodity programs.

The Safety Net & Future Farm Policy

This article has presented three approaches to a farm household safety net based on income or expenditure thresholds already used in other Federal assistance programs, and a fourth that is also based on the concept of a minimum standard of living. While implementation issues are not addressed, these safety-net approaches could be used in conjunction with some form of commodity program. Were this minimum-standard type of safety-net con-

cept introduced as policy, the amount of compensation would likely be adjusted to reflect lower threshold levels than used in this analysis, current tax benefits for the poor, and benefits from other Federal assistance programs.

A primary benefit of applying to the agricultural sector a safety-net concept based on supporting a minimum standard of living would be the effectiveness: farm household income changes would be compensated up to some agreed-upon level year-in and year-out, as commodity prices, production, or other factors changed.

The drawbacks of this type of safety net stem from possible negative behavioral incentives. For example, a farmer may see no need to make capital investments or business decisions to improve farm income, knowing that a safety net provides a reasonable and reliable income support without the risk. In the absence of a safety net, some inefficient farmers would exit farming; in the presence of a safety net, these farmers may instead continue to farm. Insofar as society may wish that these farmers exit (e.g., because they operated inefficiently), a safety net can lead to a suboptimal outcome.

The farm sector is clearly heterogeneous, and a one-size-fits-all policy prescription cannot simultaneously fulfill all policy goals. But a clear understanding of objectives and intended beneficiaries must be the starting point for discussions of future farm policy. **AO**

Linda Ghelfi, Craig Gundersen, James Johnson, Kathy Kassel, Betsey Kuhn, Ashok Mishrok, Mitchell Morehart, Susan Offutt, Laura Tiehen, and Leslie Whitener morehart@econ.ag.gov; (202) 694-5581 whitener@econ.ag.gov; (202) 694-5444

For more analyses and data on farm households, visit the **Farm Business Economics Briefing Room** on the Economic Research Service website
www.econ.ag.gov/briefing/fbe/